

ID: 00920

Type: Poster

Topic: Miscellaneous

An Application of an Electronic Report System in order to integrate clinical and molecular data and guide the therapeutic strategy in Paraguay

Sipan Arevshatyan¹, Josefina Ayala², Diego Boscá³, Verónica Burriel¹, Cinthia Gauna², Rita Denis⁴, Ita Yoffe⁴, Maider Ibarrola-Villaba⁵, Gloria Ribas⁵, Andrés Cervantes⁵, Jose Alberto Maldonado³, María Teresa Martínez⁶, Oscar Pastor¹, Tania Fleitas⁵

1) GemBiosoft, Valencia 2) National Cancer Institute, Capiatá-Paraguay 3) VeraTech for health, Valencia 4) Hospital de Clínicas- National University of Asunción 5) INCLIVA, Valencia 6) Laboratorios Curie SA, Asunción-Paraguay

Electronic report systems are being extended all over the world to acquire, validate, store, protect, and process clinical, pathological and molecular data of patients. The management of information in oncology is currently complex where "omic" information must be integrated together with the patient's clinical data to improve decision making process. Conceptual modelling is an important activity to design this kind of Information Systems (IS). The conceptual scheme is a concise description of data requirements specified by the application designer, including detailed descriptions about types of entities, relationships and constraints. Currently, most Health Information Systems (HIS) are built by using traditional IS modelling technologies.

A pilot Data Management System was designed, tested and implemented into two hospitals of Asuncion, Paraguay: Hospital de Clinicas and Instituto Nacional del Cancer within the framework of a collaboration project between centres from Spain and Paraguay with a funding from a grant by CONACYT-Paraguay. The main objective of the project was to design a platform adapted to the needs of the oncology hospitals of Paraguay, where, in addition to the clinical information, genomic data could be integrated for clinical, statistical and research purposes.

Methodology: Design Science (proposed by J. Wieringa) methodology has been used to accomplish the research based on Conceptual Modelling. The platform was developed in 3 phases: Phase a) Initial design was performed in Valencia as a cooperative work between clinicians from the Medical Oncology Department Hospital Clínico Universitario de Valencia and Bio-informaticians from GemBiosoft and Veratech for Health. The Clinical report system was developed following the ISO-13606 standard.

Phase b) collaborative work with Paraguayan researchers and clinicians to adapt the platform to the Paraguayan public oncology hospital needs. Phase c) Testing and pilot implementation to correct mistakes and improve the model.

Results:

The final model was finished in June 2018. The platform is divided into 5 views including patient demographic information, episode description, complementary information, treatments, pathological and genomic information. At the end of the pilot project a survey was performed by 10 clinicians from Paraguay who participated in the development of the platform to evaluate the level of satisfaction based on usability, flexibility and design of the system. Results of this survey showed a level of satisfaction: 8 out of 10 on average.

Conclusions:

Our platform is the first platform that integrates the electronic medical record and the genomic data in Paraguay. The platform is a robust and agile system that automates the access to information, makes it possible to obtain statistical data and facilitates the research adapted to the needs of the oncology department of the two public hospitals in Paraguay. The use of the pilot implementation by a greater number of users will allow to analyze its true usability.